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Research Article

The Fintech Revolution: How Digital Trading Platforms Reshape Retail Investment

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Abstract: ***Purpose*:** This research examines the influence of online trading platforms on retail investor engagement in Odisha with a focus on important factors including ease of use, accessibility, perceived security, user experience, and the role of financial literacy as a mediator. The research seeks to establish a holistic picture of how the platforms affect investor behaviour and decision-making, as part of the changing financial environment in Odisha. ***Design/methodology/approach*:** The research uses an empirical, quantitative method with primary data gathered from 300 retail investors in urban, semi-urban, and rural areas of Odisha. A structured questionnaire with closed-ended and Likert scale-based questions captures information on platform adoption behaviour, ease of use, perceived security, user experience, and financial literacy. Stratified random sampling provides a balanced sample of various demographic profiles. Data analysis includes descriptive statistics, multiple regression analysis, Structural Equation Modelling (SEM), correlation analysis, ANOVA tests, and regression-based path analysis to identify direct, indirect, and mediating relationships. ***Findings*:** The findings indicate that online trading platforms have a high positive effect on retail investor participation (O = 0.875, T = 34.675, p = 0.000). Accessibility and ease of use also contribute to higher adoption levels (O = 0.164, T = 2.896, p = 0.004), and perceived security is instrumental in fostering investor confidence (O = 0.642, T = 11.941, p = 0.000). User experience, such as interface design, speed, and reliability, also affects long-term platform use (O = 0.579, T = 1.247, p = 0.012). Financial literacy is found to be a significant mediator, enhancing the relationship between platform adoption and making informed decisions (O = 0.111, T = 1.097, p = 0.023). ***Originality*:** This research provides a new, region-focused analysis of digital trading platforms in Odisha, underscoring the relationship between technological adoption, user experience, security, and financial literacy. The results offer actionable suggestions for enhancing platform accessibility and promoting increased retail investor participation to further financial inclusion and market development in emerging markets.

Keywords: Accessibility; Adoption Behaviour; Digital Trading Platforms; Ease of Use; Financial Literacy; Investor Confidence; Perceived Security; Retail Investor Participation; User Experience

INTRODUCTION

Over the past decade, growth in financial technology has transformed access by retail investors to financial markets. Web-based trading sites have played a critical role in doing so by opening up the stock markets, commodities, and other financial goods to investors on an unprecedented scale. Sites have greatly diminished barriers to entry by offering live information, prompt execution of trades, and convenient interfaces. The rise of digital trading has dramatically transformed the world of finance, providing retail investors with greater access to a broad range of financial instruments and markets than ever before. But along with this heightened accessibility has come a multiverse of regulatory challenges that seriously threaten retail investor protection. The rapid development of digital assets such as cryptocurrencies and other types of digital securities has far outstripped efforts at developing detailed regulatory frameworks. This imbalance has made it easier for regulatory loopholes, especially with regards to AML and KYC requirements, to destabilize and compromise the integrity of financial markets (Miao, 2024). There has been a dramatic increase in the role of various investors in the stock market. Retail investors tend to remain on investment undertakings without having the requisite skills, qualifications, and pertaining to effective management of due diligence and financial research (Khan and Shabbir, 2025). Their financial performance may also be traced to several psychological biases (Kite et. al., 2022). Retail investors are increasingly becoming active traders, a phenomenon that has been on the radar of the media, regulators, and the firms whose stocks are traded (Osipovich 2020; Phillips 2021; U.S. Securities and Exchange Commission [SEC] 2021).

Trading apps, which enable investors to purchase and sell investment products almost entirely through apps on their mobile phones, have revolutionised the world of retail investing. They have provided consumers with access to a much broader range of products, from fractional shares to more speculative products such as crypto assets. This ability is embedded in an interactive interface that, with frequent advertising, has attracted a broader client base. The number of retail investors, or individual investors, has grown substantially because of technology advancements that offer convenient access to retail investments via different websites and apps (Shankar et al., 2021; Aldridge and Krawciw, 2017). Mobile apps have transformed the

capital market, which was previously reserved for institutional or big asset investors and made it more accessible to the masses (Chishti and Barberis, 2016). What was previously traditional, with high costs and entry barriers, has been simplified and made more affordable. The number of investors has risen due to this development, mostly among retail investors who invest using personal money and do not possess professional investment expertise.

Technology infusion in financial markets has altered retail investing's very nature substantially. Online trading websites, giving stocks, mutual funds, derivatives, and other assets real-time exposure, have armed investors with facts to take appropriate decisions (George, 2024; Mer et. al., 2024). Accessibility of online trades via mobile applications and websites has diminished the role of traditional brokers, thus lowered the costs of investing and rendering it more self-sufficient (Dell'Erba, 2024). In Odisha, where retail investor involvement has traditionally been low, electronic trading platforms have provided new avenues for people to access financial markets. Drivers like rising internet penetration, smartphone usage, and policy efforts encouraging financial inclusion have also hastened the growth of such platforms. Still, the degree to which electronic trading platforms have driven increased retail investor engagement in Odisha is a matter of empirical research.

One of the major determinants of adoption of digital trading platforms is how easy and accessible they are. Investors, especially those who are new to stock trading, tend to prefer those platforms that are easy to navigate, offer hassle-free transactions, and simple account management (Soebdhan, 2023). Most digital trading platforms address this demand by providing friendly interfaces, walk-through features, and AI-powered insights. In Odisha, where a large percentage of the population might lack exposure to financial markets, accessibility becomes the key. Regional language support, easy account opening procedures, and low documentation needs could increase platform usage (He et al., 2017). Having the capacity to invest with lower capital, make real-time fund transfers, and enjoy quick customer service further increases retail investor participation. Security issues are perhaps the biggest obstacle to the adoption of online trading platforms on a large scale. Retail investors remain apprehensive about online trading, citing concerns regarding fraud, hacking, identity theft, and unsanctioned transactions. A platform's perceived security has a direct bearing on investor confidence and usage (Wang et. al., 2024). Online trading platforms are required to institute strong security policies, including two-factor authentication, end-to-end encryption, and fraud detection measures, to reassure investors of secure trading (Ogunola et. al., 2024). In Odisha, which has highly inconsistent levels of financial literacy, investing in educating investors about cybersecurity techniques and platform protection features can enhance confidence and instill more investor participation.

The overall customer experience of online trading platforms has a direct impact on investor involvement and retention. An uninterrupted trading experience—defined by ease of use, speed in processing transactions, and system stability—is paramount to sustained involvement among retail investors (Judijanto and Wardhani, 2024). On the other hand, constant technical glitches, delayed order executions, and inadequate customer support can become causes of frustration and halting usage of the platform. In Odisha, where most new investors use internet trading platforms to enter financial markets, a perfect user experience would be the key. Personalized guidance, portfolio evaluation tools, and automated alerts can increase investor involvement. Reliability of systems, reduced downtimes, and improved platform performance can encourage sustained involvement and long-term investment development.

The purpose of this research is to thoroughly analyse the effect of online trading Platforms on retail investor participation in Odisha, with emphasis on the key issues that affect their adoption, use, and ongoing participation. This study assesses how ease of use and accessibility affect adoption, seeking to find out to what extent user-friendly interfaces, streamlined procedures, and ease improve participation. In addition, it aims to understand the role of subjective security on investor trust, acknowledging that site safety and trust in data safeguards are significant factors for continuous engagement. It also studies factors of user experience—such as design, pace, and dependability—to gauge their effects on continuous engagement. The study examines the intervening role of financial literacy and investigates the degree to which knowledge about market movements and trading fundamentals impacts an investor's choices and platform conduct. By integrating all these findings, the study seeks to formulate actionable suggestions to enhance the usability, security, and user experience of online trading platforms to ultimately increase retail investor engagement in Odisha's developing financial economy.

Literature Review

Digital trading platforms on retail investor participation

The growth of electronic trading platforms has revolutionized the face of retail investment, more than ever before making it easier for retail investors to enter the financial markets. Retail investors, previously constrained by a high barrier to entry, now have a range of online sources and tools available that provide opportunities for trading that were previously the domain of institutional participants. Brown, Stice, and Rice (2015) contend that investment applications are crucial in influencing investment news and media reactions to financial news, which can benefit retail investors. Emerging technology has the potential to overcome bias in well-informed decision-making. Through the use of the most current information obtained by investors through its application-based investment platform, individual investors are better positioned to make more well-informed investment choices. Nonetheless, the German research conducted yielded the opposite finding (Kalda et al., 2021). Subsequent to investment app use by retail investors, their choices become more biased and lean towards riskier, highly volatile stocks along with historically high-yielding ones, consistent with representativeness bias and loss aversion. Danbolt, Eshraghi and Lukas (2022) in his England research on social platforms for investor information exchange can enhance the investment decision

quality by minimizing the disposition effect, i.e. selling loss-making shares too hesitantly and winning shares too promptly. Tahir and Danarsari (2023) stated that overconfidence has a positive and significant effect on rational investment decision-making, whereas representativeness and loss aversion have no significant effect. The historical price data component of the application does not have a significant effect on the moderating relationship between them.

Ease of use and adoption of digital trading platforms

The readiness of an individual to embrace a system without doing anything is seen as perceived ease of use (Tahar et. al., 2020). Perceived ease of use is likely to have a positive influence on attitude towards the adoption of mobile banking (Raza et. al., 2017; Elhajjar and Ouaida, 2020; and Indarsin and Ali, 2017). Perceived ease of use is also likely to impact perceived usefulness in different settings, e.g., online banking (Raza et. al., 2017). Reith et al. (2020) discovered that performance-based criteria are the key predictors of experienced users' behavioural intention, while system-based and personal barriers influence inexperienced users' behavioural intentions. Therefore, differences in performance expectation, effort expectation, security, and risk aversion were determined, which reflect that the existing marketing strategy adopted by platform operators focusing solely on the functioning of the platform appears insufficient to fulfil the needs of the users.

Perceived security and adoption of digital trading platforms

The rise in retail investors, trading platforms, and smartphones is driving digital revolution in stock trading. Mobile-centric digitization investment by trading companies is quickly becoming a major source of competitive leverage. Unique psychological characteristics regarding risks make stock trading a distinctive individual decision-making behavior. Quality of information, privacy, and security protection to ward off perceived risks of trading on mobile platforms. In addition, we document the moderation of PR through cognitive risk-decreasing traits in its relationship with BIs toward adopting MoST. Moreover, PFC moderates between PR and the TAM variables on BIs to implement MoST (Gupta and Dey, 2024). Raut and Kumar (2024) illustrate the importance of utilizing the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB) in combination to come up with an extensive understanding of the determinants of an investor's behaviour toward adopting and using technology for online trading. The combined strategy of TAM and TPB can be applied to better understand technology adoption and usage in risky activities such as investment choices. The strong moderating role of financial literacy offers a chance to explore the possible improvements in investing decision-making. Xie et al. (2021) suggest that perceived value, perceived risk, and social influence are significantly related to people's intention to adopt FinTech, while performance expectancy, effort expectancy, and perceived risk influence perceived value, thereby shaping adoption intention.

User Experience and adoption of digital trading platforms

The financial industry is going through a revolutionary change fuelled by tremendous technical innovation in the modern digital era. As financial services move more and more into the online environment, the role of user interface (UI) and user experience (UX) in financial apps has become a top priority (Redmond, 2022). Financial apps, including mobile banking and investment sites, have become the main interface between institutions and customers. Runsewe et al. (2024) analyse the key elements involved in the improvement of User Interface (UI) and User Experience (UX) in finance applications, with particular focus on the role of technology and design to improve user interaction, trust, and usability. The study outlines trends such as simplicity, customisation, and integration of security features that boost user confidence. Further, it covers up-and-coming technologies such as Artificial Intelligence (AI), Machine Learning (ML), blockchain, Augmented Reality (AR), Virtual Reality (VR), and Voice User Interfaces (VUI) that are expected to change the user experience in financial services. Lastly, it covers how to balance usability with security, responding to technology advances, keeping up with regulation requirements, and being sustainable in design. Raut and Kumar (2024) found that the positive reviews centred on the ideas of usefulness, convenience, satisfaction, app features, and simplicity. Negative reviews focus on topics such as distrust, buggy updates, unreliability, security issues, and poor customer service. Judijanto and Wardhani (2024) stresses the importance of effective mobile payment systems and simple user interface models in promoting customer interaction and transaction success. The findings are instrumental in informing Jakarta e-commerce enterprises on the imperative to maximize technology and design components to enhance competitiveness and business success.

Financial literacy, digital trading platform usage and retail investor participation

The advancement of the technological revolution underscores the importance of literacy like never before, with digital literacy being fundamental to the acquisition and application of new technologies. Their availability facilitates the socio-economic advancement of citizens, enabling them to participate in a contemporary digital society and interact more efficiently (Bejaković and Mrnjavac, 2020). It signifies "the spectrum of literacies associated with the utilization of digital/new technologies" (Mohammadyari and Singh, 2015). Digital literacy is an essential and modern "life skill" acquired in the current information and knowledge culture (Sandra, 2022). Individuals enthusiastic about utilizing technology for daily activities are, in fact, not utilizing technology (Betts et al., 2019). Several prior studies have demonstrated that those with digital literacy utilize digital systems more effectively than those without. Bergdahl et al. (2020) assert that students possessing higher levels of digital proficiency are more inclined to engage in technology-driven learning systems. Ullah et al. (2022) examine the influence of financial competence and digital literacy on the intention of Pakistani customers to utilize m-payment/m-banking, grounded in the Technology Acceptance Model (TAM).

The data were collected from 454 individual smartphone users residing in Punjab province through an online and offline questionnaire survey. Structural equation modelling was utilized to assess customer data. The data indicate that (1) financial capability does not correlate with the intention to adopt, but rather through perceived usefulness; (2) digital literacy has a substantial link with intention, mediated by perceived ease of use.

Conceptual Model

In spite of the increasing popularity of online trading platforms throughout India, few studies examine their influence on retail investor involvement in Odisha — a state with diverse socio-economic backgrounds and differing degrees of digital literacy. Current research largely canters on urban financial centres, neglecting the specific issues of retail investors in semi-urban and rural Odisha, where ease of access, usability, and trust in online platforms could be vastly different. Further, although prior research recognizes the significance of user experience and perceived security, few examine these variables within an integrated framework with financial literacy as a mediating variable on investor choice. This lacuna is leaving behind an incomplete picture of how platform security, reliability, and design influence sustained interaction, especially in parts of the world where digital infrastructure is developing. There is also a lack of region-specific research on the actual impediments that retail investors experience — for instance, accessibility issues, limited financial literacy, or skepticism regarding online trading systems — and how such barriers can be alleviated to encourage greater usage. This research fills these voids by conducting a holistic, data-based assessment of digital trading platform usage in Odisha, considering not just the technological and experiential drivers of engagement but also the critical influence of financial literacy in improving decision-making capacity. The study also attempts to fill this void by presenting customized recommendations to enhance accessibility, user experience, and platform trust, promoting improved financial inclusion for Odisha's retail investors. On the basis of above past reviews and gap in research after Hypothesis are formulated:

H1: Digital trading platforms significantly increase retail investor participation in Odisha.
H2: Ease of use and accessibility positively influence the adoption of digital trading platforms among retail investors in Odisha.
H3: The perceived security of digital trading platforms positively influences retail investor participation.
H4: User experience (e.g., interface design, speed, and reliability) significantly impacts retail investors continued use of digital trading platforms.
H5: Financial literacy mediates the relationship between digital trading platform usage and retail investor participation.

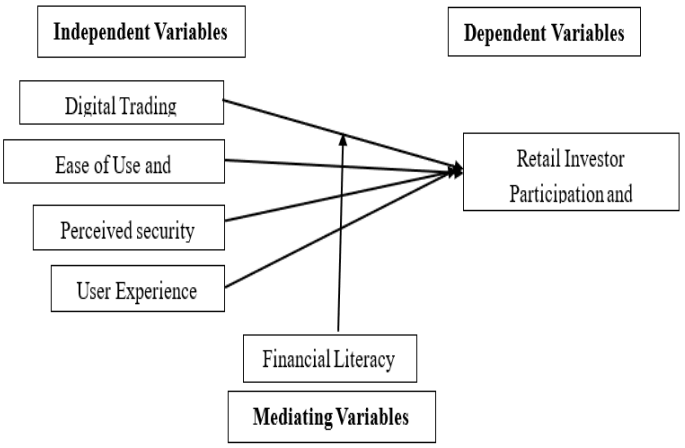

Figure 1: Conceptual Model of the Study

The theoretical framework of the research demonstrating the interaction among independent variables, mediating variables, and the dependent variable. The independent variables are Digital Trading Platforms, Ease of Use and Accessibility, Perceived Security, and User Experience — all critical drivers of retail investor behaviour. These variables are predicted to influence retail investor adoption and participation, the dependent variable. The model also includes Financial Literacy as a mediating variable, postulating that financial knowledge is the key that mediates the gap between the use of digital platforms and good investor decision-making. Under this arrangement, the ease of using digital trading platforms can directly increase investor involvement, but the impact will be further enhanced where investors have sufficient financial literacy. Likewise, perceived security should increase investor confidence, but such trust is enhanced further if investors are aware of market risks and online safety features. User experience, including features such as interface layout, speed, and dependability, also builds long-term engagement with a platform, although its effects may vary with how much investors are aware of trading capabilities. The financial literacy mediating role suggests that without such knowledge, even the most secure, accessible, and easy-to-use platforms could not induce meaningful participation. This model informs the research by highlighting that although platform design is paramount to adoption, financial literacy plays a pivotal role in enabling educated, sustained, and assertive retail investor participation in Odisha.

Research Methodology

Research Design

The study design is empirical, quantitative research with primary data analysis to attain the specified objectives. The study is cross-sectional in nature, gathering data at one point in time to measure investor participation trends and attitudes. The sampling method will comprise a mix of stratified and convenience sampling to provide proper representation of urban, semi-urban, and rural investors, mirroring Odisha's rich financial ecosystem. The questionnaire contains closed-ended and Likert scale-based questions, emphasizing important variables like ease of use, accessibility, perceived security, user experience

variables (interface design, speed, and reliability), and levels of financial literacy. This in-depth study design assures reliability of data, validity, and a well-comprehended understanding of factors influencing retail investor engagement by online trading platforms in the region.

Sample and Data

The research is based on primary data obtained from retail investors from different parts of the state, thereby covering a representative sample of urban, semi-urban, and rural areas. A well-structured questionnaire was formulated, with a combination of close-ended and Likert scale questions to elicit detailed information that was in accordance with the research goals. The sample consists of 300 active retail investors trading on digital trading platforms, recruited using stratified random sampling in order to represent various age groups, income classes, educational attainment, and degrees of trading experience proportionally. 400 questionnaires were distributed among retail investors in India. Out of 400 surveys, 338 responses were received, which is a response rate of 84.5%. Out of these 338 responses, 38 responses were not usable because they had incorrect or incomplete answers. Surveys were carried out online to achieve inclusivity for respondents with differing levels of digital literacy. The survey was organized into major categories, including adoption behaviour on the platform, user-friendliness, accessibility, perceived safety, user experience, and levels of financial literacy. Other demographic information such as age, gender, education, and income was obtained to examine adoption and usage patterns on the platform. In order to determine the effects of electronic trading platforms on involvement, measurement variables such as frequency of trades, diversification of investment, and number of trades were analysed. The methodical collection of a wide range of data prevents weak, uncertain findings and yields credible, usable recommendations to enhance access, safety, and consumer friendliness for Odisha's retail investors.

The population demographics of the survey respondents in "Digital Trading Platforms and Their Impact on Retail Investor Participation in Odisha" demonstrate a balanced division across the primary categories, presenting a thorough comprehension of the targeted population. Gender is proportionately divided, with 53.3% of male and 46.7% of female participants, promoting varied viewpoints. Most of the respondents belong to the 26-35 age group (41.3%), which means young adults are a strong force in the adoption of digital trading, followed by 18-25 years (32.7%), which shows increasing interest among the youth. Educational qualification is largely graduation-level (56%), with a significant 24% having postgraduate qualifications, which implies that a higher educational level is associated with retail investment involvement. Employment status is biased towards full-time workers (57%), suggesting financial security among the majority of investors, with part-time workers (22.7%) and others (20.3%) also being part of the participant pool. Income levels are bunched up between ₹25,001-₹50,000 (36.7%) and ₹50,001-₹75,000 (28%), suggesting a middle-income majority, although a lesser proportion earns above ₹1,00,000 (3.3%), which suggests a larger financial population. Experience-wise, 43.3% of the respondents have 1-5 years of investing experience, reflecting an emerging but relatively mature investor base, and 20.3% are new entrants with less than a year of experience. Geographically, urban investors are predominant at 58.3%, followed by rural (26%) and semi-urban (15.7%), indicating that while digital trading platforms have reached urban areas successfully, rural and semi-urban regions still offer growth opportunities. This comprehensive demographic analysis offers a good basis for examining how various population groups use digital trading platforms and what encourages or discourages them.

Table 1: Demographic Profile of the Respondents

S No.	Demographic Characteristics	Category	N	%
1	Gender	Female	140	46.7%
		Male	160	53.3%
2	Age	18-25 years	98	32.7%
		26-35 years	124	41.3%
		36-45 years	34	11.3%
		46-55 years	26	8.7%
		Above 55 years	18	6.0%
3	Educational Background	Senior Secondary Education	49	16.3%
		Graduation	168	56.0%
		Post-Graduation	72	24.0%
		Others	11	3.7%
4	Employment Type	Full type Employees	171	57.0%
		Part time Employees	68	22.7%
		Others	61	20.3%
5	Income (Per Month)	Less than 25,000	80	26.7%

		25,001-50,000	110	36.7%
		50,001-75,000	84	28.0%
		75,001 - 1,00,000	16	5.3%
		More than 1,00,000	10	3.3%
6	**Year of Experience in Investing**	Less than a year	61	20.3%
		1-5 years	130	43.3%
		6-10 years	77	25.7%
		More than 10 years	32	10.7%
7	**Geographic Location**	Rural	78	26.0%
		Semi-Urban	47	15.7%
		Urban	175	58.3%

Statistical Analysis

Statistical analysis of the study uses both inferential and descriptive techniques to measure the set goals. Descriptive statistics such as mean, standard deviation, and frequency distribution are used to describe demographic information and present a profile of retail investors' participation on online trading platforms. Multiple regression analysis is used to analyse the effect of ease of use, accessibility, perceived security, and user experience on platform adoption, measuring the strength and relevance of these independent variables on retail investor participation. Correlation research also tests the association between perceived security and investor confidence and identifies the role of trust on platform usage. Structural Equation Modelling (SEM) is used to test the mediating role of financial literacy on investor choice-making, determining whether financial literacy makes a significant contribution to the relationship between platform use and successful investment returns. An ANOVA test is utilized to test differences in user experience factors across varied demographics, determining how interface quality, speed, and reliability contribute to ongoing use. Statistical analysis combines these approaches to provide an integrated, data-supported picture of the influences on retail investor participation in Odisha's online trading environment

RESULTS

Reliability of Questionnaire

Table 2: Reliability of the Questionnaire

Reliability Statistics	
Cronbach's Alpha	N of Items
.911	30

Table 2 shows the reliability test of the questionnaire employed to measure the effect of online trading platforms on retail investor participation in Odisha. The Cronbach's Alpha coefficient of 0.911 reflects outstanding internal consistency for the 30 items in the survey. This implies that the questionnaire is very reliable, i.e., the items reliably measure the intended constructs — e.g., digital platform adoption, ease of use, security, user experience, and financial literacy — without considerable random error. A Cronbach's Alpha score of over 0.7 is commonly regarded as satisfactory, and a score of more than 0.9 demonstrates excellent reliability, which enhances the validity and solidity of the gathered data for additional statistical analysis and hypothesis testing. The high reliability guarantees that the answers are truly representative of deep insights into retail investor behaviour factors, making the conclusions of the study more valid.

Item Removed

Table 3: Deleted or Dropped items from Study

Construct	**Indicator**
User Experience	UE4
	UE5
Retail Investor Participation and Adoption	PA1
	PA2

Table 3 displays observable items which had not been brought into focus as part of this study because the factor loading thereof was less than 0.50. Deletion or dropping of observed measures, UE4, UE4, PA1 and PA2, ensued.

Measurement Model:

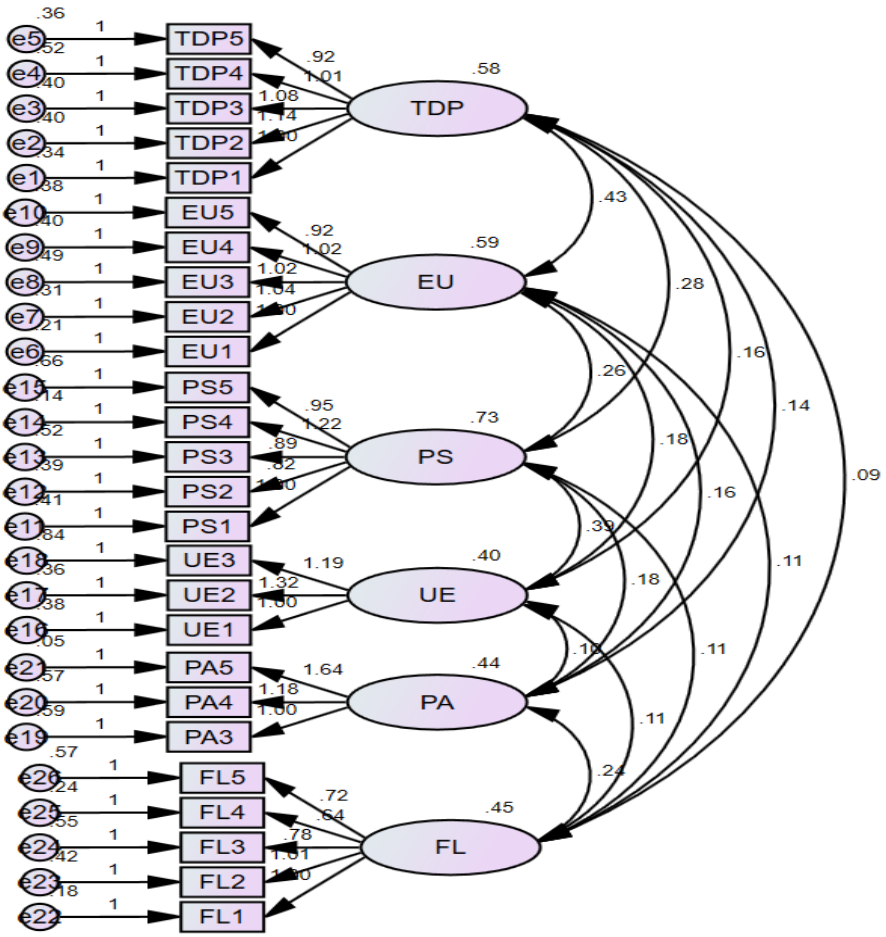

Figure 2: Measurement Model

IBM AMOS 23.0 is used for the measurement and analysis of data. The research is heavily concentrated on internal consistency and reliability, indicator validity, convergent validity, and discriminant validity. Below are the results for each question asked to measure the reliability and validity of the measurement model.

Construct Reliability and Validity:

Table 4: Construct Reliability and Validity

S No.	Construct	Items	Standardized loadings	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
1	Digital trading platforms	TDP1	0.796	0.896	0.923	0.698
		TDP2	0.808			
		TDP3	0.792			
		TDP4	0.730			
		TDP5	0.759			
2	Ease of use and Accessibility	EU1	0.857	0.875	0.899	0.695
		EU2	0.817			
		EU3	0.744			
		EU4	0.779			
		EU5	0.752			
3	Perceived Security	PS1	0.801	0.838	0.807	0.682
		PS2	0.745			
		PS3	0.724			
		PS4	0.942			
		PS5	0.706			
4	User Experience	UE1	0.720	0.911	0.922	0.725
		UE2	0.814			
		UE3	0.637			
5	Financial Literacy	FL1	0.650	0.896	0.907	0.702
		FL2	0.717			

		FL3	0.978			
		FL4	0.843			
		FL5	0.725			
6	**Retail Investor Participation and Adoption**	**PA3**	0.677	0.856	0.903	0.695
		PA4	0.663			
		PA5	0.741			

Table 4 presents construct validity and reliability of the study with regard to online trading websites and their effects on retail investor involvement in Odisha. The findings reveal high internal consistency and convergent validity for all the constructs. Cronbach's Alpha values are between 0.838 and 0.911, all above the acceptable value of 0.7 (Hair et al., 2011), indicating reliable measurement scales. Composite Reliability (CR) measures between 0.807 and 0.923, showing high reliability for constructs. The Average Variance Extracted (AVE) for all the constructs is higher than 0.5 (Hair et al., 2017), with measures between 0.682 and 0.725, showing satisfactory convergent validity, i.e., items loading within each construct account for a substantial proportion of variance. Electronic trading platforms have high reliability (α = 0.896, CR = 0.923, AVE = 0.698), indicating a strong gauge of platform performance. Accessibility and ease of use (α = 0.875, CR = 0.899, AVE = 0.695) and perceived security (α = 0.838, CR = 0.807, AVE = 0.682) have equally good reliability, affirming their status as essential investor engagement determinants. User experience proves to be highly reliable (α = 0.911, CR = 0.922, AVE = 0.725), highlighting the need for a smooth, interactive interface. Financial literacy is also a reliable construct (α = 0.896, CR = 0.907, AVE = 0.702), indicating that investors' financial knowledge is well measured. Finally, retail investor participation and adoption construct (α = 0.856, CR = 0.903, AVE = 0.695) has robust validity, meaning that the model properly reflects investors' behaviour. Standardized loadings for each item are primarily higher than 0.7, further supporting the constructs' validity and reliability, making the model a sound theory of retail investor participation in online trading platforms.

Discriminant Validity

Table 5 shows results that illustrate the discriminant validity of retail investor involvement factors in digital trading platforms in Odisha. Fornell and Larcker (1981) characterize discriminant validity as the probability that the squared Average Variance Extracted (AVE) of a construct will be greater than 0.5 compared to all other constructs. The square root of the Average Variance Extracted (AVE) for every construct, marked on the diagonal, is higher than the inter-construct correlations, thus establishing robust discriminant validity. For example, they are better than their respective correlations with other constructs, thus establishing that every variable measures a distinct facet of investor behaviour and platform use. The strong discriminant validity supports that the model's constructs are clearly defined and distinct, thus reinforcing the validity of subsequent structural analyses regarding the influence of online platforms on investors' participation in Odisha.

Table 5: Discriminant Validity of Construct

	A	**EWB**	**F**	**JS**	**RW**	**WLB**
A	**0.831**					
EWB	0.427	**0.844**				
F	0.351	0.411	**0.761**			
JS	0.794	0.488	0.383	**0.830**		
RW	0.429	0.917	0.411	0.491	**0.836**	
WLB	0.293	0.398	0.739	0.325	0.409	**0.839**

Model Fit

Findings from Table 6 are that the model used to measure electronic trading platforms' influence on retail investor participation in Odisha is properly fitted. The CMIN/df ratio value of 1.953 is far less than 5 (Hair et al., 2009), which suggests proper model parsimony and suitable data representation without any overfitting. The Goodness of Fit Index (GFI) is 0.878, well above the threshold of 0.8 (Hair et al., 2009), which shows that the model accounts for a large percentage of the covariance among the variables in the population. The Adjusted Goodness of Fit Index (AGFI) is 0.850, well above the 0.80 threshold (Wang et al., 2020), which shows that the model is still a good fit even after adjusting for degrees of freedom. The Root Mean Square Error of Approximation (RMSEA) is 0.056, well below the threshold of 0.08 (Schubert et al., 2017), indicating a high fit between the hypothesized model and the real data structure. These indices confirm the reliability and potency of the model in measuring the association of retail investor participation with online trading sites, thereby increasing its validity for future research and interpretation .

Table 6: Goodness Model Fit

The goodness of model Fitness Index	**CMIN/Df**	**GFI**	**AGFI**	**RMSEA**
Calculated Value	1.953	0.878	0.850	0.056
Required Value	*Less than 5*	*More than 0.8*	*More than 0.80*	*Less than 0.08*

Hypothesis Testing

In PLS-SEM, hypotheses are usually tested by computing a P value for each path coefficient. The P value can be categorized

as either one-tailed or two-tailed, based on the researcher's a priori knowledge of the direction of the relationship and the sign of the respective coefficient (Kock, 2016).

The hypothesis test findings in Table 7 present a rich description of the factors affecting retail Usage and adoption of electronic trading platforms by Odisha investors. The first hypothesis, which explores the direct relationship between digital trading platforms and retail investor activity, finds a high positive correlation (O = 0.875, T = 34.675, p = 0.000), thus validating that digital trading platforms are a major driver of investor activity. The second hypothesis, which tests the effect of ease of use and accessibility, is substantial (O = 0.164, T = 2.896, p = 0.004), showing that easily accessible and user-friendly platforms encourage participation. The third hypothesis, the perceived security hypothesis, illustrates a strong and significant positive influence (O = 0.642, T = 11.941, p = 0.000), indicating that retail investors are very concerned with the security functions of the platform. The fourth hypothesis, measuring user experience, is statistically and modestly significant (O = 0.579, T = 1.247, p = 0.012), suggesting the significance of smooth and user-friendly platform interfaces to facilitating adoption. The fifth hypothesis tests the mediating effect of financial literacy, with the suggestion that electronic trading platforms facilitate participation by raising the level of investors' financial literacy (O = 0.111, T = 1.097, p = 0.023). The lowest standard deviations in all the channels again justify the consistency and robustness of such results and therefore attest to the proposition that electronic trading platforms do exert significant influences on Odisha's retail investor actions for numerous reasons.

Table 7: Hypothesis Testing

	Original sample (O)	Sample mean (M)	Standard Deviation (STDEV)	T statistics (|O/STDEV|)	P values
Digital trading platforms -> retail investor participation and Adoption	0.875	0.847	0.025	34.675	0.000
Ease of use and accessibility -> retail investor participation and Adoption	0.164	0.164	0.056	2.896	0.004
perceived security -> retail investor participation and Adoption	0.642	0.643	0.054	11.941	0.000
User experience -> retail investor participation and Adoption	0.579	0.578	0.063	1.247	0.012
Digital trading platforms -> Financial literacy -> retail investor participation and Adoption	0.111	0.112	0.010	1.097	0.023

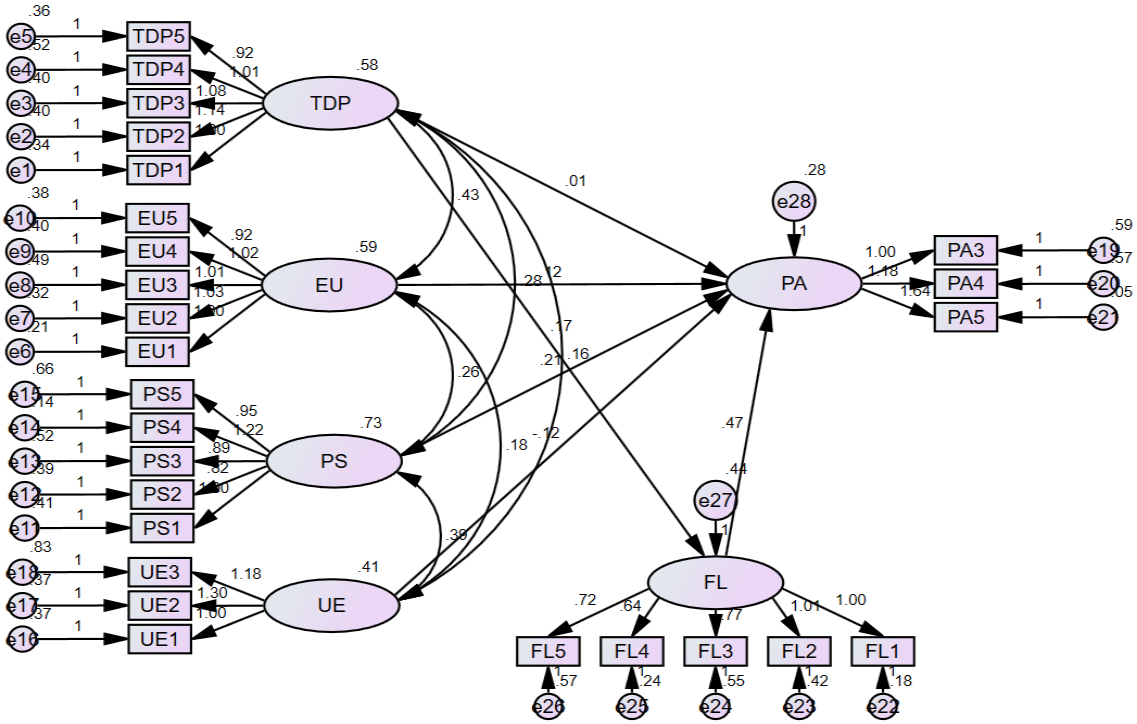

Figure 3: Structural Model

DISCUSSION

The analysis of the study explores the detailed findings from the hypothesis testing results shown in Table 7. The results prove that digital trading platforms have a significant impact on retail investor participation, with an extremely strong and statistically significant positive correlation (O = 0.875, T = 34.675, p = 0.000), evidenced by (Tahir and Danarsari, 2023; Jiang et. al., 2018). This indicates that the ease and convenience that such platforms provide are important determinants of improved investor participation. The significant coefficient emphasizes that the platforms are more than facilitators but also stimulating drivers of involvement, transforming retail investors in Odisha's accessibility to and usage of financial markets.

The second assumption indicates ease of use and accessibility, which reveals a high positive impact (O = 0.164, T = 2.896, p = 0.004). The finding is an indication that platforms with easy interfaces and processes facilitate higher adoption rates, especially for new investors, as substantiated by (Chong et.al., 2021 and Prastiawan). In a state such as Odisha, where internet penetration and digital literacy are still in the process of evolving, the need for intuitive design and accessibility cannot be overemphasized. Sites that reduce complexity and minimize entry barriers will be more inclined to attract and retain retail investors, creating a more inclusive investment environment.

Perceived security appears as a further crucial determinant, having a strong positive, statistically significant effect on retail investor engagement (O = 0.642, T = 11.941, p = 0.000), evidenced by (Ali et. al., 2021 and Ho et. al., 2020). This conclusion underscores the core position of trust and safety in online financial transactions. Investors are more inclined to participate when they feel confident that their personal and financial information are safe. This is especially the case in Odisha, where suspicion regarding online transactions might discourage potential investors. Thus, digital platforms focusing on secure login, data encryption, and transparent policies can create confidence and stimulate wider participation.

The fourth hypothesis assesses user experience — including platform design, speed, and reliability — and finds a moderate but statistically significant effect (O = 0.579, T = 1.247, p = 0.012). This finding indicates that although user experience is not the strongest motivator for adoption, it is crucial in maintaining participation underpinned by (Chaudhry and Kulkarni, 2021). Platforms that offer fluid, quick, and reliable trading experiences are more likely to retain users, turning occasional investors into repeat participants. This is a crucial observation for platform developers seeking to enhance customer retention and participation rates.

The final hypothesis tests the mediating function of financial literacy, showing an indirect but statistically significant effect (O = 0.111, T = 1.097, p = 0.023), as suggested by Raut (2020) and Zhao and Zhang (2021). This highlights that online platforms are avenues to access markets and a channel to better investors' financial knowledge, thus enabling better-informed investing choices. Financial knowledge gives regular investors the confidence to tackle market challenges, making informed decisions instead of speculative transactions. This is especially critical in Odisha, where most regular investors could be lacking adequate financial training. Sites that incorporate educational content, guidance, and live support can increase investor knowledge, leading to continued participation and better financial performance.

The findings of the study as a whole show that online trading platforms, propelled by simplicity, security, user experience, and financial literacy, are transforming retail investor participation in Odisha. The findings not only confirm the relevance of such platforms but also offer actionable lessons for developers, politicians, and financial institutions looking to increase retail investor participation in emerging markets.

CONCLUSION

The research thoroughly analyses the influence of online trading websites on retail investor participation in Odisha through the use of sound statistical analysis. The evidence verifies that online platforms significantly increase investor participation with usability, accessibility, perceived safety, and user experience as main drivers. The strong link between platform adoption and participation reveals the way technical-access enhanced accessibility revolutionizes conventional investing. Notably, perceived security is the most important element, which means retail investors value trust in platform processes. User experience, however of low importance, is still relevant, which emphasizes intuitive interfaces, efficiency, and reliability. The research also indicates the mediating influence of financial literacy, which shows that educated investors are more confident to take part and make effective choices. This indicates that in addition to technological improvement, improving investors' knowledge is needed to support ongoing participation. Overall, the findings confirm that online trading platforms — when they are accessible, safe, and easy to use — create an expanded investment ecosystem in Odisha that empowers retail investors with various demographics.

Although its design is thorough, the study has some limitations. For one, the cross-sectional method takes data at a point in time, limiting observations on changing trends and long-term retail investor behaviors. A longitudinal study might provide more refined observations on consistent platform use and shifting investor attitudes. Secondly, though the sample size (300 usable responses) is varied and statistically sufficient, the research is still geographically restricted to Odisha, making generalizability difficult for other areas with varying socio-economic conditions. Further, since the research depends on self-reported information, there are inherent biases like social desirability bias or overreporting of levels of financial literacy. Finally, technological differences between urban and rural settings might skew data on accessibility and user experience, which also needs to be investigated.

The research sets the stage for a variety of future studies. A longitudinal framework might be able to capture the effects on retail investor activity of changing digital trends, innovations on platforms, and market situations over time. Extrapolation to other regions or states would potentially provide comparative insight, suggesting place-specific attributes shaping platform uptake. Subsequent research

might also investigate the contribution of future technologies, e.g., AI-powered investment counsellors, blockchain-enabled security systems, or tailored trading algorithms, to user experience and trust. In addition, the integration of behavioural finance insights — such as risk tolerance, cognitive biases, and emotional considerations — might enhance investor decision-making on online platforms. Finally, policymakers and fintech providers would be well-served by future studies on regulatory regimes, striking a balance between innovation and investor protection, promoting a safer, more inclusive, and more efficient digital trading ecosystem in Odisha and elsewhere.

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